

AI AND LEADERSHIP IN THE DIGITAL TRANSFORMATION ERA: EXAMINING DECISION MAKING, TEAM DYNAMICS, AND ETHICAL CONSIDERATIONS

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SUMMARY

This study examines the relationship between AI use and leadership dynamics in the context of digital transformation. The paper focuses on the relationships between AI use, decision-making quality, team dynamics, trust in AI, and ethical concerns. Although the use of AI in organizations has expanded in recent years, empirical studies explaining how it affects leadership effectiveness in real-world work environments are still limited. The study is based on survey data collected in Azerbaijan. After data cleaning, 103 valid responses were used for statistical analysis. Pearson correlation and multiple linear regression methods were applied to assess the relationships between variables. The results show that there is a strong positive relationship between AI use and decision-making quality. However, the strongest explanatory factors in terms of leadership effectiveness were trust in AI and team dynamics. Although ethical concerns were perceived by respondents, they did not play a statistically significant role in assessing leadership effectiveness.

Keywords: *Artificial intelligence; leadership; decision-making; digital transformation; organizational behavior.*

INTRODUCTION

While AI was previously perceived more as a technical and automation tool, it is now becoming part of everyday business processes in terms of information processing, comparing alternatives, coordinating tasks, and supporting decision-making. This change also affects the concept of leadership. Traditionally, leadership has been associated with experience, intuition, communication skills, and the ability to guide people towards common goals. These characteristics are still important, but in the digital era, leaders are also expected to be able to work with data, understand technological tools, and critically evaluate digital results. In this regard, artificial intelligence is not a mechanism that replaces leadership, but rather a tool that supports leadership

processes when used correctly. One of the main areas where artificial intelligence can affect leadership is decision-making. AI tools can help process information faster, identify alternatives, and make decisions more systematically. However, using AI does not automatically mean more effective leadership. If users do not trust the AI results or if these results are not accepted by the team, the practical benefit of the technology may be limited.

Therefore, the relationship between artificial intelligence and leadership should be examined in a broader context. Leadership effectiveness is not only related to the level of technology use, but also to how that technology is accepted, how it is integrated into team processes, and how much trust it creates in users. Against this background, the aim of this article is to examine the relationship between the use of artificial intelligence and leadership effectiveness in the context of digital transformation. The study took decision-making quality, team dynamics, trust in artificial intelligence, and ethical concerns as key variables. The empirical analysis is based on survey data collected in Azerbaijan, and correlation and multiple linear regression methods are used to assess the relationships between variables.

LITERATURE REVIEW

The role of artificial intelligence in organizational management has become one of the most widely discussed topics in scientific literature in recent years. While digitalization was previously associated with automation and information systems, artificial intelligence is currently considered an important factor affecting decision-making, teamwork, and leadership processes. Vial (2019) explains digital transformation not only as a technological change, but also as a process that changes the logic of organizations' activities and the form of value creation. Davenport and Ronanki (2018) note that one of the most practical areas of application of artificial intelligence is decision-making support. Jarrahi (2018) explains this process as the mutual complementarity of humans and artificial intelligence and shows that AI

strengthens the analytical capabilities of human decision-makers rather than replacing them.

From the perspective of leadership, the issue is broader. Northouse (2021) and Yukl (2013) explain leadership as a process of influencing, coordinating, and managing relationships. This approach shows that leadership is not just about making the right decisions; human relationships, trust within a team, and collaboration also play an important role. Digital transformation does not eliminate these functions, but simply changes the environment in which they are implemented. Avolio et al. (2014) explain the concept of e-leadership and show that technology has given a new shape to leadership processes. At the same time, Wilson and Daugherty (2018) emphasize with their “collaborative intelligence” approach that the best results are achieved not by replacing humans with artificial intelligence, but by working together. The use of artificial intelligence in leadership is also closely related to trust and ethical issues. If users do not trust the results provided by AI, the real impact of this technology on decision-making and leadership processes remains limited. Trust is not only related to the accuracy of the results, but also to the transparent, fair and responsible application of the technology. Floridi et al. (2018) emphasize the importance of ethical principles for the usefulness of AI. Mittelstadt et al. (2016) draw attention to the risks of bias, lack of transparency and division of responsibility in algorithmic systems. Overall, the literature shows that AI does not directly and automatically change leadership; its real impact is shaped by factors such as the quality of decision-making, team dynamics, trust and ethical perceptions.

RESULTS AND DISCUSSION

The empirical analysis was conducted based on survey data collected in Azerbaijan. Pearson correlation analysis and multiple linear regression model were applied to assess the relationships between variables.

Table 1: Pearson correlation results

Relationship	r	p-value	Interpretation
AI usage → Decision-making quality	0.711	<0.001	Strong positive relationship
AI usage → Leadership effectiveness	0.491	<0.001	Moderate positive relationship
Decision-making quality → Leadership effectiveness	0.584	<0.001	Moderate-to-strong positive relationship
Team dynamics → Leadership effectiveness	0.610	<0.001	Strong positive relationship
Trust in AI → Leadership effectiveness	0.641	<0.001	Strong positive relationship
Ethical concerns → Leadership effectiveness	0.169	0.088	Weak and statistically insignificant relationship

Source: Compiled by the author based on the survey results.

The correlation results show that there is a strong positive relationship between the use of AI and the quality of decision-making ($r = 0.711$). This result suggests that respondents who use AI tools more actively evaluate the decision-making process as more systematic and useful. There is also a positive relationship between AI use and leadership effectiveness ($r = 0.491$), but this relationship is more moderate. Stronger relationships were observed between trust in AI and leadership effectiveness ($r = 0.641$) and team dynamics and leadership effectiveness ($r = 0.610$). This result suggests that the impact of AI on leadership is not explained solely by the level of technology use; here, users' trust in the technology and how it is integrated into team processes play a more important role. The relationship between ethical concerns and leadership effectiveness was weak and statistically insignificant ($r = 0.169$, $p = 0.088$). This does not mean that ethical issues are unimportant, but simply that respondents are more focused on the benefits of AI in decision-making and teamwork in practical evaluations.

Table 2: Multiple regression results for leadership effectiveness

Predictor	B	Standardized Beta	t-value	p-value
AI usage	0.143	0.183	1.830	0.070
Decision-making quality	-0.035	-0.037	-0.279	0.781
Team dynamics	0.339	0.348	3.505	0.001
Trust in AI	0.458	0.383	3.914	<0.001
Ethical concerns	-0.013	-0.012	-0.156	0.877

Source: Compiled by the author based on the survey results.

Multiple linear regression results showed that the model explained 52.5% of the variance in leadership effectiveness ($R^2 = 0.525$). This is a reasonable indicator for a survey-based social science study. According to the regression results, the variables that most strongly explain leadership effectiveness are trust in artificial intelligence ($\beta = 0.383$, $p < 0.001$) and team dynamics ($\beta = 0.348$, $p = 0.001$). Although the use of AI produced a positive effect, it was not statistically significant at the 5% level ($\beta = 0.183$, $p = 0.070$). This result shows that the use of AI alone does not automatically make leadership more effective. Although decision-making quality showed a significant relationship in the correlation analysis, it did not have a strong effect in the regression model. This shows that leadership is not only about making

the right decision, but also about having that decision accepted by the team and implemented in an environment of trust.

CONCLUSION

The results of this study show that it is not possible to explain the relationship between artificial intelligence and leadership in a very simple way. Artificial intelligence has a certain impact on decision-making, teamwork and management processes in organizations, but this impact does not arise only from the use of AI tools. The main issue is how this technology is used, how it is accepted by users and to what extent it is adapted to teamwork. One of the most obvious results of the study is the strong positive relationship between the use of artificial intelligence and the quality of decision-making. That is, respondents who use AI tools more often evaluate the decision-making process as more systematic and useful. However, the main result of the study is that leadership effectiveness is not explained only by the level of use of AI. According to the regression results, the factors that have a stronger impact on leadership effectiveness are trust in artificial intelligence and team dynamics. If users do not trust the results of AI or if this technology is not properly integrated into teamwork, its real benefits may be limited. This result shows that the approach to artificial intelligence in organizations should not be only at the technical level. It is necessary to clearly explain to users how AI tools work, what data they are based on and in what cases their limitations exist. This increases trust in the technology and makes AI a more useful tool in decision-making and leadership processes. At the same time, when AI supports coordination, task sharing and collaboration within the team, its impact on leadership processes seems to be stronger. It is also noteworthy that ethical concerns did not statistically significantly affect leadership effectiveness. This does not mean that ethical issues are unimportant. On the contrary, issues such as data confidentiality, transparency, bias and accountability remain important for the long-term and reliable use of AI. The results of this study simply show that respondents pay more attention to the practical benefits of AI, its support for decision-making and its impact on teamwork when evaluating leadership effectiveness.

Overall, this study concludes that AI is not a replacement for leadership. It is a tool that, when used correctly, supports leadership processes. The real value of AI lies not in the technology itself, but in how it is perceived by people and how it is integrated

into organizational processes. Therefore, organizations should consider not only technical capabilities but also issues of trust, teamwork, and ethical use when implementing AI. Future research could benefit from examining this topic in a broader sample and across sectors. In particular, research conducted exclusively among managers, team leaders, and individuals directly involved in decision-making processes could provide a more accurate picture of the relationship between AI and leadership. Longitudinal studies could better demonstrate how AI use impacts leadership processes over time.

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SÜNİ İNTELLEKT VƏ RƏQƏMSAL TRANSFORMASIYA DÖVRÜNDƏ LİDERLİK: QƏRARVERMƏ, KOMANDA DİNAMİKASI VƏ ETİK MƏSƏLƏLƏRİN TƏHLİLİ

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XÜLASƏ

Bu tədqiqat rəqəmsal transformasiya şəraitində süni intellektin liderlik dinamikaları ilə əlaqəsini araşdırır. Məqalədə əsas diqqət AI istifadəsi, qərarvermə keyfiyyəti, komanda dinamikası, süni intellektə etimad və etik narahatlıqlar arasındakı münasibətlərə yönəldilmişdir. Son illərdə süni intellektin təşkilatlarda tətbiqi genişlənsə də, onun real iş mühitində liderlik effektivliyinə necə təsir göstərdiyini izah edən empirik tədqiqatlar hələ də məhduddur. Tədqiqat Azərbaycanda toplanmış sorğu məlumatlarına əsaslanır. Məlumatların təmizlənməsindən sonra 103 etibarlı cavab statistik analiz üçün istifadə edilmişdir. Dəyişənlər arasındakı əlaqələri qiymətləndirmək üçün Pearson korelyasiya və çoxlu xətti reqressiya metodları tətbiq olunmuşdur. Nəticələr göstərir ki, süni intellektdən istifadə ilə qərarvermə keyfiyyəti arasında güclü müsbət əlaqə mövcuddur. Lakin liderlik effektivliyi baxımından ən güclü izahedici amillər süni intellektə etimad və komanda dinamikası olmuşdur. Etik narahatlıqlar respondentlər tərəfindən qəbul edilsə də, liderlik effektivliyinin qiymətləndirilməsində statistik baxımdan əhəmiyyətli rol oynamamışdır. Ümumilikdə tədqiqat göstərir ki, AI-nin liderliyə təsiri birbaşa deyil, daha çox qərarvermə, etimad və komanda prosesləri vasitəsilə formalaşır.

Açar sözlər: *süni intellekt; liderlik; qərarvermə; komanda dinamikası; rəqəmsal transformasiya; təşkilati davranış.*

ЛИДЕРСТВО В ЭПОХУ ИСКУССТВЕННОГО ИНТЕЛЛЕКТА И ЦИФРОВОЙ ТРАНСФОРМАЦИИ: АНАЛИЗ ПРИНЯТИЯ РЕШЕНИЙ, КОМАНДНОЙ ДИНАМИКИ И ЭТИЧЕСКИХ ВОПРОСОВ

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РЕЗЮМЕ

В данном исследовании рассматривается взаимосвязь между искусственным интеллектом и динамикой лидерства в контексте цифровой трансформации. В статье основное внимание уделяется взаимосвязи между использованием ИИ, качеством принятия решений, командной динамикой, доверием к искусственному интеллекту и этическими проблемами. Хотя применение искусственного интеллекта в организациях в последние годы расширилось, эмпирические исследования, объясняющие его влияние на эффективность лидерства в реальных рабочих условиях, все еще ограничены. Исследование основано на данных опроса, собранных в Азербайджане. После очистки данных для статистического анализа были использованы 103 достоверных ответа. Для оценки взаимосвязей между переменными использовались методы корреляции Пирсона и множественной линейной регрессии. Результаты показывают сильную положительную взаимосвязь между использованием искусственного интеллекта и качеством принятия решений. Однако наиболее сильными объясняющими факторами с точки зрения эффективности лидерства оказались доверие к искусственному интеллекту и динамика команды. Хотя этические соображения были приняты респондентами, они не сыграли статистически значимой роли в оценке эффективности лидерства. В целом, исследование показывает, что влияние ИИ на лидерство не является прямым, а скорее опосредовано принятием решений, доверием и командными процессами.

Ключевые слова: *искусственный интеллект; лидерство; принятие решений; динамика команды; цифровая трансформация; организационное поведение.*

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